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| EXAMINER | |
|---|---|
| SEKUL, MARIA LYNN | |
| **ART UNIT** | **PAPER NUMBER** |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/577,683 | LINDEMANN ET AL. | |
| | Examiner | Art Unit | |
| | MARIA L. SEKUL | 4124 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 Feb 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *1-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *11-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 Apr 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08 Feb 2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Monitor and Connection Control for Idle Connections.

2. The abstract of the disclosure is objected to because there is extraneous language on line 20, "Figure 1". Correction is required. See MPEP § 608.01(b).

3. The numbering of claims is not in accordance with 37 CFR 1.121(c) which requires indicating the proper status of every claim and 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

A preliminary amendment was entered canceling original claims 1-10; original claims 11 and 12 were not cancelled. However, the preliminary amendment indicates the status of claims 11 and 12 as "(new)".

Correction of the numbering and status of the claims is required. For purposes of examination, Claims 11-18 have been examined as put forth in the preliminary amendment.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(o) because there are no descriptive labels or legend by which to understand the drawing.

Further, the drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because Fig. 2, reference character "16" has been used to designate two separate features of the drawing.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

5. **Claim 18** is objected to because of the following informalities: line 10, "the network controller" appears to refer back to "a connection controller" in line 5. If this is the case, please replace "the network controller" with - - - the connection controller - - - .

### *Claim Rejections - 35 USC § 101*

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claims16 and 17** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A software object, and any

instances of that object, is an abstract idea related to implementation of software and hence is not a patentable process, machine, manufacture, or composition.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claim 11-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **O'Toole, Jr. (US Patent 7,287,082)** (hereinafter O'Toole) in view of **Zhang et al. (US PGPub US2002/0002621)** (hereinafter Zhang).

As to **Claim 11**, O'Toole discloses an apparatus with

"a router and at least one connection controller, said connection controller controlling connections involving at least one of the terminals to another network said router, in use, routing data to and from terminals on a local area network" (O'Toole discloses a router and a connection handling application called the idle connection reduction device, **Fig.1-2)**; and

"a monitor for monitoring usage of a network address and for sending a message indicative of non-usage to the connection controller" (O'Toole describes a connection monitor that monitors connections that have been idle for a specified period of time and notifies the connection policy of the idle connection, **Fig. 2, col. 7, lines 18-28, 38-47**) and

"wherein the connection controller is responsive to receipt of the message to determine whether to release a connection to another network" ( O'Toole describes a idle connection reduction which detects an idle drop condition, invokes a connection drop policy which selectively drops idle connections; **Fig. 2-4, col. 9, lines 39-54**).

O'Toole does not explicitly disclose "a network address translation translator for translating addresses on incoming data to addresses of terminals on the local area network" and "the network address translator includes a table of network addresses".

The background of Zhang discloses a NAT for mapping between private to public network addresses (**¶ 15**), and maintaining a NAT table (**Fig. 5, ¶ 35, 37**). Zhang does not disclose "having associated use state data".

O'Toole discloses "having associated use state data" (O'Toole discloses collecting idle connection metrics based on usage, for instance, an idle timer for connections (**col. 7, lines 44-47**).

O'Toole and Zhang are analogous art because they are both related to establishing network connections for routing data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine connection monitoring functions in O'Toole with the NAT described in Zhang. The NAT device allocates network resources, i.e. public network addresses; and the monitoring function monitors network resources. The motivation for using the idle monitoring function as taught by O'Toole with the NAT in Zhang being that the NAT tracks connections to public network addresses and the monitor provides a way to track idle NAT connections which may then be released. As such, it would have been obvious to one skilled in the art at the time the invention was made to also combine these functions into one apparatus.

**Claim 12** discloses all of claim 11 "wherein the monitor is an IP router" (O'Toole further discloses that the idle connection reduction device monitors a set of connections, and can be implemented on any device having connections including the network router; **Fig. 1-2; col. 6, lines 14-19, 53-55**).

**Claim 13** discloses all of claim 12 "wherein the connection operates in accordance with a point to point protocol (PPP)".

Zhang further discloses a router implementing a protocol stack using IP over a filter function, which filter function may be PPP (**Fig.2**). It would have been obvious to one skilled in the art at the time the invention was made to create connections using PPP as taught in Zhang with the connection control feature of O'Toole being that PPP creates a point-to-point connection that can be monitored.

Zhang also teaches "and at least one additional protocol" (Zhang teaches that another session by a user does not have to use PPP but may use any network protocol; **¶ 35**).

**Claim 14** discloses all or the apparatus of Claim 13 "wherein the at least one additional protocol is one of a point to point tunneling protocol (PPTP) or a point to point protocol over Ethernet (PPPoE)". The PPPoE protocol was designed for transmitting PPP over Ethernet. It would have been obvious to one skilled in the art at the time the invention was made to implement PPP over PPPoE if the network also implemented Ethernet.

**Claim 15** discloses all of the apparatus of claim 11 "wherein the connection controller is an entity on the router". O'Toole teaches the idle connection reduction device which controls the connections could be implemented in any computerized device including the router. (**col. 6, lines 52-55**).

**Claim 16** discloses all of the apparatus of claim 15 "wherein the at least one connection controller is a software object". It would have been obvious to one skilled in

the art at the time the invention was made that the application would be implemented with software. To use a software object is simply a choice made at implementation and does not add function or utility to the invention.

**Claim 17** discloses all of the apparatus of claim 16 "wherein a plurality of respective connection controllers is provided, each controlling a respective connection". As stated previously for claim 16, this limitation is simply an implementation choice and is an inherent function of the software object.

As to **Claim 18**, Zhang discloses "providing a router connected by an interface to ports for applications running on terminals on the LAN" and "providing a connection controller for controlling connection between the router and the another network" (**Fig. 5; ¶ 36 and ¶ 15**).

O'Toole discloses "monitoring use of the interface to the ports" (O'Toole discloses a connection monitor, **Fig. 3**).

O'Toole discloses "recording the use of a port in a network address translator table" (O'Toole discloses that it maintains an idle connection metric for each idle connection, **Fig. 4**). It would have been obvious to one skilled in the art at the time the invention was made to maintain the metrics in O'Toole in the NAT table in Zhang being that the port in the network address translator table defines a connection and metrics are maintained for each connection.

O'Toole discloses "IF the interface IS unused for the connections to the ports, sending a message to the network controller to break the connection between the router and the another network". O'Toole discloses an idle connection handling application

which monitors use of connections and release connection that are idle for a certain period of time (**Figs. 1-2, 4)**.

As stated previously, Zhang and O'Toole are analogous art because they deal with establishing connections and routing data through a network. The NAT table that provides the mapping between private and public addresses in Zhang tracks a connection between the terminal and the other network. It would have been obvious to one skilled in the art at the time the invention was made to use the monitoring function in O'Toole with the connection controller in Zhang as it provides a way to detect idle connections at the NAT level that should be released for re-use.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Son (US PGPub US2003/0145082) discloses a NAT device that includes a monitor system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA L. SEKUL whose telephone number is (571)270-7636. The examiner can normally be reached on Monday - Friday 8:00-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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